

Ultrathin tabular grain emulsions with sensitization enhancements

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Abstract

A chemically and spectrally sensitized ultra-thin tabular grain emulsion is disclosed including tabular grains (a) having $\approx 111\mu$ major faces, (b) containing greater than 70 mole percent bromide and at least 0.25 mole percent iodide, based on silver, (c) accounting for greater than 90 percent of total grain projected area, (d) exhibiting an average equivalent circular diameter of at least 0.7 μ m, and (e) exhibiting an average thickness of less than 0.07 μ m. It has been observed that increased speed and contrast as well as improvements in speed-granularity relationships can be realized when during the chemical sensitization silver and halide ions including iodide and chloride ions are added to the ultrathin tabular grain host emulsion to deposit epitaxially on up to 50 percent of the surface area of the tabular grains silver halide protrusions (a) having an isomorphic face centered cubic crystal lattice structure, (b) containing at least a 10 mole percent higher chloride ion concentration than the tabular grains, and (c) containing an iodide concentration that is increased by the iodide ion addition.

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